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ABSTRACT

Adults' and children's descriptions of rooms were compared in terms of the cognitive and communicative aspects of segmentation and linearization. Children's increasing ability to gain structural discourse transparency by using specific linguistic devices was examined. A total of 50 Dutch-speaking children of ages 4, 6, 8, 10, and 12 described a room which had earlier been described by 20 adults. While the adults segmented their room descriptions according to distinct furniture groupings, this skill was not shown by the children until the age of 6, and increased with age. Adults linearized their descriptions by proceeding along the walls or according to types of furniture. No linear organization was apparent in the 4-year-olds' descriptions, but a dramatic increase in linearization was observed from ages 6 to 8. No further developmental progression was noted after the age of 8. The results show developmental changes in the coordination of cognitive and communicative aspects of discourse organization. The discrepancy in the cognitive and communicative systems decreases with increasing age. Although the subjects have gained the appropriate linguistic devices by age 8, they are unable to use these devices in such a way as to make the discourse structure fully transparent until the age of 12. (RW)

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Discourse Organization and Sentence Form in Child Language
How Children Describe Rooms

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1. Introduction

The present paper is concerned with cognitive and communicative aspects of discourse production in child language. It deals with childrens' growing ability to gain structural discourse transparency by using specific linguistic devices in particular ways. The structural transparency of a discourse is defined in terms of what its structure should reveal to the listener in order to enable him to (approximately) restore the universe of discourse the speaker is referring to. In terms of its segmental organization a transparent discourse should reflect basic subdivisions in its domain of reference. If, for example, a certain chain of events can be considered a closed episode then a narrative should be segmented in such a way that the episode in question is referred to by exactly one delineable discourse segment. In terms of its linear organization a transparent discourse should preserve the temporal structure of its domain of reference. So, for example, for story telling this means that the order in which certain events are narrated should be similar (if not identical) to the order in which these events originally took place.

Segmentation and linearization both have a cognitive as well as a communicative aspect. The speaker's cognitive task is to establish discourse segments which match separate units in the non-linguistic domain of reference. The listener, on the other hand, is faced with the cognitive problem to restore these units from what has been said. The speaker's communicative problem is how to make the segmental structure of a discourse overt, so that the listener can fulfill his cognitive task. Gesturing, pausing and intonation are paralinguistic devices which may serve to mark segment borders. The devices under consideration in this paper are, however, of linguistic nature. I will mainly investigate subjects' use of linguistic constructions that are grammatical variants - or in a somewhat outdated terminology - paraphrases of each other. Syntactic paraphrases, on the one hand, like John left the room and its clefted counterpart It was John who left the room are equivalent in terms of their truth conditions and thus have the same semantic meaning. However, they match different presuppositions and are thus different with respect to their pragmatic meaning. The syntactic paraphrases at issue in the present paper vary with respect to what may be called 'constructional dependency'. Independent constructions such as full main clauses do not require an antecedent and can thus fill any position in a discourse. Dependent

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clauses such as ellipses, attributive clauses or coordinate clauses do require an antecedent and thus can't be used in positions where no such antecedent is present.

Full lexical paraphrases, on the other hand, like He came by train and He came by railroad are comparatively infrequent and actually occur as rarely as synonyms do in a given language. They are also psychologically less interesting than partial paraphrases like (i) The table is to the right of the shelf and (ii) The table is beside the shelf, where (i) entails (ii) but not vice versa. Because sentence (ii) is more vague than sentence (i), the question arises as to when it will be necessary to locate a certain object as specifically as in sentence (i) and when it will be sufficiant to give a less specific localization like in (ii). In the present paper, this problem will be tied with the problem of linearization. It is hypothesized that - in adult language - specific linearization properties determine the choice between lexical items of different degrees of specificity.

The discourses that are considered, here, are room descriptions given by fifty Dutch speaking children of ages 4, 6, 8, 10 and 12 with ten subjects in each age group. Half of the subjects in each group described the room while they were looking at it, half of the subjects described it from memory. So far, no striking differences between these two conditions have been found, and I will therefore not consider them for the purpose of this paper. The room to be described was a doll-house living room, which had been modelled after a typical dutch living room. The same room had earlier been described by twenty adult speakers (see Ehrich & Koster 1982). The main purpose of this study is to compare adults' descriptions with the descriptions given by children of different ages. This comparison will be restricted to the cognitive and communicative aspects of (i) segmentation and (ii) linearization.

2. Adults' Room Descriptions

2.1. Segmentation

The room to be described was clearly arranged into four different subareas, a sitting area on the left wall, a study area on the back wall, a dining area in the middle and a cabinet with a lamp and a vase on either side on the right wall. It could thus be expected that subjects would segment their descriptions in such a way that each discourse segment would describe exactly one of these subareas. Indeed, subjects behaved in accordance with this expectation. The criterion for identifying discourse segments in their speech productions is what may be called 'Frame Anchoring'. By this it is meant that speakers localize individual pieces of furniture by reference not to other pieces of furniture but by reference to intrinsic parts of the room, namely the walls, the entrance door and the windows. Thus, Frame Anchoring excludes

cross references over different subareas, and it is typically used whenever a speaker begins with the description of any new subarea. Nineteen out of twenty adult speakers used Frame Anchoring in their initial utterances describing the different subareas.

Adult subjects not only segmented by Frame Anchoring, which gave their descriptions a clear cognitive organization, they also linguistically marked segment borders, which made the segmental structure of their discourse overt to the listener. We found clear structural differences between segment-initial and non-initial utterances. Segment-initial utterances were found to be grammatically independent, that is they generally took the form of full main clauses and did not contain spatial anaphors like Dutch daarvoor (lit. 'there-in-front-of'). Non-initial utterances, on the other hand, were characteristically dependent. They took the form of attributive clauses or ellipses and very frequently did contain spatial anaphors. For example, sentence (i) below would be typical for a segment-initial clause , (ii) for a non-initial one: (i) Onder het raam staat een bank (ii) Met daarvoor een tafel. ((i) Under the window stands a sofa (ii) With there-in-front-of a table').

2.2. Linearization

Because spatial arrangements are three-dimensional in nature they differ from, say, chains of events, in that they do not provide for any natural linearization which determines the order in which individual items of a spatial arrangement should be represented within the linear flow of speech. Usually, speakers solve this linearization problem by describing places in the format of an imaginary tour, that is, they describe apartments or routes as if they were walking through the environment in question (Linde & Labov 1975, Klein 1979). In doing so, they temporalize space and by this achieve a derived natural order. Speakers who describe rooms give their descriptions the format of a gaze tour (Ullmer-Ehrich 1982), that is they describe rooms as if they were gazing along the walls.

Two different levels of linearization can be distinguished. At the higher level, speakers bring the different subareas of the overall arrangement into a linear order. At the lower level,they linearize information about different pieces of furniture. Two different linearization modes were found in adults room descriptions: Connected Descriptions and Disconnected Descriptions. At the higher level of linearization, Connected Descriptions proceed continuously along the walls and the middle of the room gets mentioned in either the first or the last position of the description only. Connected Descriptions do not allow jumps. Disconnected Descriptions, on the other hand, do involve jumps. On the lower level of linearization, Connected Descriptions first introduce one piece of furniture, then locate a second piece with respect to the first

piece, and a third piece with rescpect to the second one etc. In Disconnected Descriptions one and only one piece of furniture serves as reference point for the localization of all other items belonging to the same subarea. It was found that adults linearize connectedly when the arrangement to be described is more or less chaotic (or as we call it 'disfunctional'), whereas they linearize disconnectedly when the arrangement to be described is a stereotype functional living room. This distribution seems to be determined by memory constraints . For a functional arrangement, it is obviously easier to remember the positions of single furniture items in terms of their relations to some functionally salient item in the subarea in question. For disfunctional arrangements, where there is nothing such as functional saliency, it seems to be helpful to remember the positions of single furniture items in terms of their direct spatial connections.

Memory constraints define the cognitive aspect of linearization. But linearization also has a communicative aspect. And again, this aspect is reflected in linguistic form, especially in the use of spatial expressions like the ones listed in the Table below.

I +Dimension +Orientation	II +Dimension -Orientation	III -Dimension -Orientation
left, right front, back	beside	at, with

Table 1: Spatial expressions with different degrees of specificity

Expressions of type I are specified for the dimension as well as for the orientation, expressions of type II are specified for dimension only, expressions of type III are specified for neither dimension nor orientation.

It turned out that adults use type I expressions of secondary deixis in the following two conditions:(a) at the higher level of linearization when they locate whole subareas by Frame Anchoring; (b) on the lower level of linearization when they give Disconnected Descriptions. There is, however, a considerable difference with respect to how these expressions are used at the different levels: at the higher level, they are always used deictically, the speaker making his own visual orientation the reference point of the description. "To the right of x" then has to be interpreted in terms of the position from which the speaker has been looking into the room. At the lower level of linearization, type I expressions are charactersitically used in the intrinsic perspective, which means that the inherent fronts of the respective reference objects are made the reference points for the descriptions. "To the rignt of x" then means "To the right of x's front side" , regardless of what

the speaker's visual orientation has been.

3. Childrens' Room Descriptions

3.1. Segmentation

Up until the age of 10, children seem to have difficulties with both the cognitive and the communicative aspect of segmentation. However, the communicative aspect evidently imposes more difficulties in that even at age 12 , children do not have full control over that aspect of segmentation.

At age 4, Frame Anchoring as a segmentation device is, for the most part, not found. Between ages 6 and 10 the use of Frame Anchoring increases from 25% to 45%, and it increases to 80% at age 12. (See Fig. 1 below). Whereas childrens' cognitive segmentation skills appear to develop slowly but steadily up until the age of 10, their communicative skills undergo a more remarkable progression at an earlier time in their development: the mean rate for segment marking increases from 11% to 32% between age 6 and 8 and then progresses to 50% at age 12.

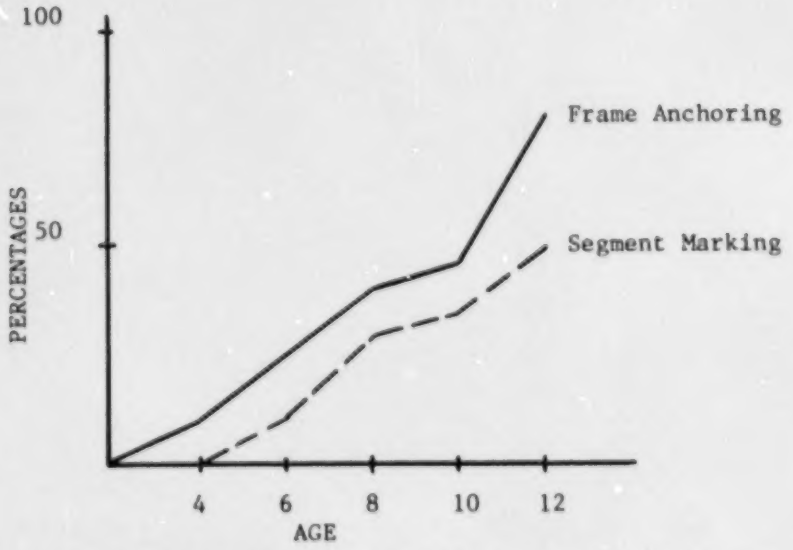

Figure 1: Mean Rates for Frame Anchoring and Segment Marking

One might hypothesize that the developmental increase in segment marking between ages 6 and 8 is due to the influence of an in-

crease in formal language training by primary school, but I have to leave this an open question here.

3.2. Linearization

The following analysis will be restricted to the lower level of linearization.

Given the fact that subjects were presented a stereotypical functional room, it could be expected that they would linearize disconnectedly, provided they were behaving like adult speakers. We first examined whether the descriptions show any recognizable linearization pattern at all. In fact, none of the descriptions given by 4 year olds were organized according to such a pattern. There was a considerable change in the use of linearization, however, between ages 4 and 8. At age 6,the mean rate for systematic linearization was 40% and it increased to 70% at age 8. After this, no further developmental progression could be recognized. The mean rate for disconnected linearization was slightly lower in each age group, but the general developmental tendency turned out to be almost the same(Fig.2).

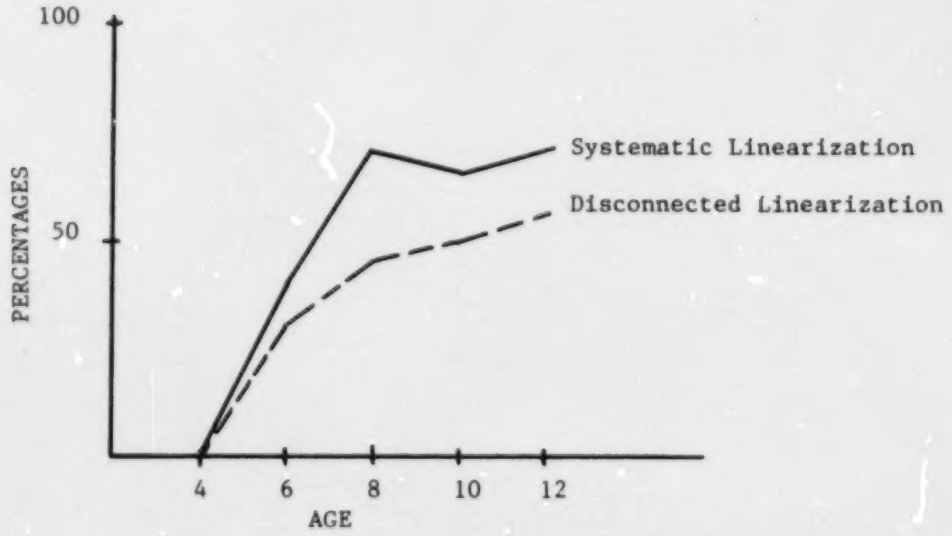

Figure 2: Mean Rates for Systematic Linearization

In general, from the age of 6 on, children seem to be quite good at linearization. But again, this is true only for the cognitive and not for the communicative aspect of linearization. That is, the linear patterns found in the analysis may well be recognizable for the analyst , who, of course, knows the arrangement in

question. Here is an example referring to the right hand side of the room, in which there was a bookcase in the middle, a lamp to the left of it and a vase to its right:

> De kast staat aan de andere kant van het raam,de boekenkast; daarnaast staat die grote schemerlamp; daarnaast staat een vaas met bloemen.
>
> the case stands on the opposite side of the window, the bookcase; beside that ('therebeside') stands the big lamp; beside that stands a vase with flowers.

The bookcase is taken as the center of the description here, which is characteristic for the disconnected linearization mode on the lower level; both, the lamp as well as the vase are located with respect to the bookcase. But this is not evident from the description itself, the second daarnaast could be interpreted linguistically as referring not to the bookcase but to the lamp. Moreover, the subject does not make clear which of either sides is meant by the 'daarnaast'. In other words, the speaker fails to make his description transparent to the listener, because he does not use the spatially more specific expressions of secondary deixis.

Up to age 12, children seem to have difficulties with the appropriate use of secondary deixis, at least at the lower level of linearization. Figure 3 shows the mean rates for secondary deixis

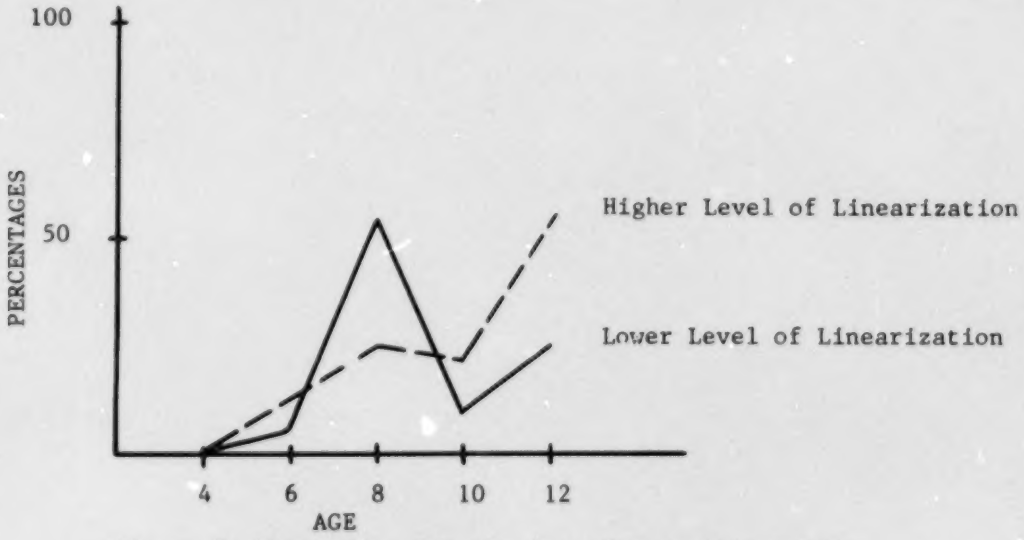

Figure 3: Mean Rates for the Use of Secondary Deixis

as used for the description of the right hand wall arrangement (bookcase,lamp,vase). Again, there is a considerable increase in the use of secondary deixis between ages 6 and 8. As shown in Fi-

gure 3, the mean rate for the use of secondary deixis decreases sharply between ages 8 and 10. this trend needs further consideration, since it is certainly not due to a general failure in using these expressions at all. With the exception of children at age 8, the mean rate for the use of type I secondary deixis is always higher on the higher level of linearization than on the lower one. Furthermore, as shown by Figure 3, it increases steadily between ages 6 and 12.

At this point it should be recalled that adults who use type I expressions of secondary deixis on both levels of linearization do so in different perspectives. They use the deictic perspective at the higher level and the intrinsic perspective at the lower level. Children in the older age groups, especially those between 8 and 10, obviously become aware of the fact that expressions of secondary deixis are generally ambiguous with respect to the two perspectives. In addition, it appears that the older children try to avoid perspective shifts by avoiding the expressions in question on the lower level altogether. However, consistency with respect to the perspective is achieved at the cost of transparency with respect to linearization and spatial orientation.

4. Conclusion

The results of this study show developmental changes in the coordination of cognitive and communicative aspects of discourse organization. With increasing age, the discrepancy in the cognitive and communicative systems as shown by both segmentation and linearization decreases. At least from age 8 on, this discrepancy cannot be explained by subjects' lack of the appropriate linguistic devices, but by their inability to use these devices in such a way that the discourse structure is made fully transparent to the listener. Evidently, the use of cognitive and communicative aspects of discourse organization develop first as separate systems. Their full integration seems to be achieved only by the age of 12, which may put this beyond the usual scope of language acquisition studies.

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References

Ehrich,V.U. & Ch.Koster (1982)."Discourse Organization and Sentence Form: The Structure of Room Descriptions in Dutch". To appear in Discourse Processes.

Klein,W.(1979) "Wegauskuenfte". In Sprache und Kontext.Zeitschrift fuer Literaturwissenschaft und Linguistik.Jg9,Heft 3.

Linde,Ch. & W.Labov(1975)."Spatial Networks as a Site for the Study of Language and Thought". In Language 51.924 - 939.